IAS Critical Design Review

Agenda

• Introduction	R. Schweiss
• Design Overview	S. Johnston
• Hardware Architecture	C. Brambora
• Operational Scenarios	S. Johnston
• Software Design	
– Overview	J. Hosler
– Operations Interface	J. Whelan
– Management and Control	A. Williard
– Database	A. Williard
– L1 Processing	T. Ulrich J. Storey
– Evaluation and Analysis	D. Kaufmann/M. Schienle
• System Test	E. Crook
• Conclusion	R. Schweiss

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Agenda

- **System Test**
  - System Test Objective
  - System Test Strategy
  - Algorithms testing and verification
  - System Test Processes
  - Configuration Control Activities
  - System Test Activities
  - System Test Tools
  - System Test Issues

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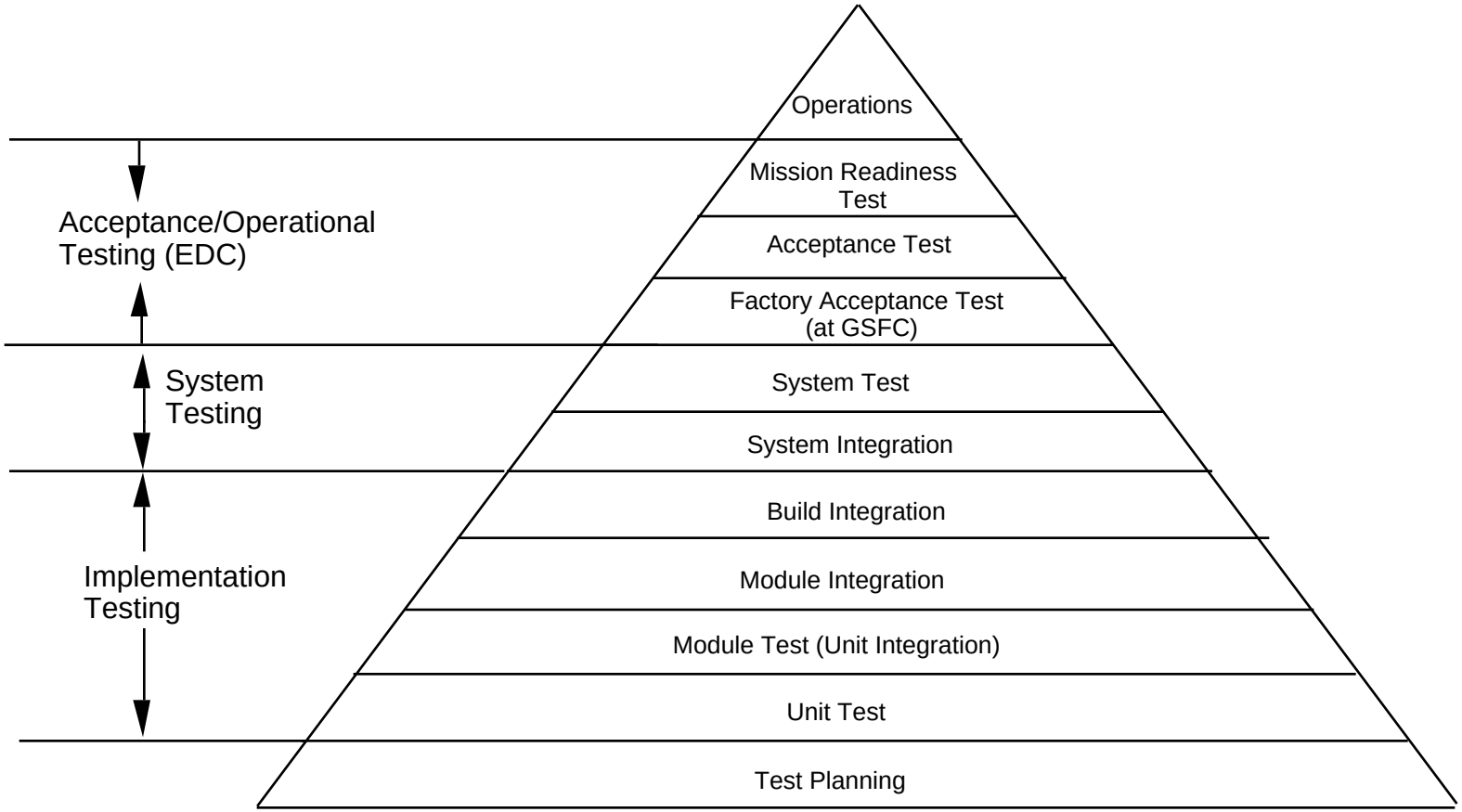
System Test Objective



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System Test Strategy

- **Conduct rigorous algorithm testing during the module test phase**
- **Once in the system test phase, compare algorithm results**
- **Verify proper implementation of interfaces**
- **Verify compliance with requirements**

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Algorithm Testing & Verification

Radiometry Algorithm Testing

- **Joint testing effort (testing & development)**
- **Identify algorithm test cases**
- **Identify test tools requirements (Test data, drivers and stubs)**
- **Verify Test Tools**
- **Conduct tests**
- **Analyze and verify test results (developers, testers, consultants, science team ...)**

Geometry Algorithm Testing

- **EDC testing effort**
- **Conduct tests and verify test results**

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System Test Processes

- **IAS System Integration and Test Plan**
  - **Documents the plan and requirements for the Development Verification and Validation**
- **System Test Procedures**
  - **Contains detailed procedures for each release test, generated 1 month before beginning of each release system test**
- **Test Procedures Walkthrough**
  - **Conducted 3 weeks before beginning of each release test, insures that the proposed test procedures adequately describe the operation of the system and verify the system requirements implemented for the current release.**

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System Test Processes(cont.)

- **System Test Readiness Review**
  - **Conducted 1 week before beginning of each release test to ascertain readiness of software and system test activities**
- **System Test Reports**
  - **Test summary reports are generated within 4 weeks of completion of each release test**

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Configuration Control Activities

- Maintain configured test tool library
- Document each test environment (i.e., software versions) via a checklist audit prior to the start of a test period.
- Establish and maintain software baseline
- Provide cleanup and maintenance of the test environment after each release test
- Receive software turnover from the development group, promote units to the test environment, release the system executables and copy them to the test environment
- Prepare software installation packages

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System Test Activities

System Test Activities	Status
Insure testability of System Requirements	Complete
Insure testability of Software Requirements	Complete
Develop System Integration and Test Plan	Complete
Test Data Requirements	
Test Tool Identification	
Establish Test Schedule	
Develop Necessary Test Tools	In Progress
Develop System Test Procedures	For each release
Create Test Scenarios	
Generate Test Data Sets	
Verify Test Tools	
Develop detailed test schedule per release	
Conduct System Test Readiness Reviews	For each release
Integrate System Components	For each release
Execute System Tests	For each release
Generate Test Summary Reports	For each release

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System Test Tools

TOOL	RESOURCE	STATUS
GTSIM	CNMOS	Reformat L5 to L7 format
LPS	CNMOS	Release 2 in Integration
HDF Swath to HDF	CNMOS	TBD
EDC DAAC Simulator	CNMOS	Release 1
MOC Simulator	CNMOS	Release 1
VSHOW	CNMOS	COTS
Collage	CNMOS	COTS
Database Table Dumps	CNMOS	Complete

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System Test Issues

- **There are 3 test requirements which require post launch data for test verification.**

- 3.2.3.4 The IAS shall be able to create systematic imagery to a geodetic accuracy of 250 meters, 1 sigma, providing all inputs are within specification. Performance applies to along-track and cross-track directions and is referenced to a nadir-viewing geometry.

- 3.2.3.8 The IAS shall provide the capability to perform image-to-image registration to an accuracy of 0.4 multispectral sensor GSD 0.9p , inthe along-track and cross-track directions, providing all inputs are within specification.

- 3.2.3.10 The IAS shall be capable of estimation the field angles to an accuracy of 0.18 arcsec, 1 sigma.